SEQUENCE LISTING

| <110> | Maquat, Lynne E. | |
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| <120> | NONSENSE-MEDIATED MRNA DECAY | |
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| | 10/525,273 2005-02-22 | |
| | PCT/US03/26166 2003-08-21 | |
| | 60/405,602 2002-08-22 | |
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| <400> ctccga | 11 agtec etetgee | 17 |
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| gcagc | gagca actgagaagc | 20 |
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| gggtti | tagtg gtacttgtga gc | 22 |
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| <210><211><212><212><213> | 23 | | | |
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| <210><211><211><212><213> | 30 | | | |
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| <400> atctgg | 33 gcacc acaccttcta caatgagcts | a | | 30 |
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atgacttcga aagtttat
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Gly Ile Leu Ala Thr Leu Ala Pro Gln Ala Gly Ser Arg Glu Asn Met
                                25
Lys Glu Leu Lys Glu Ala Arg Pro Arg Lys Asp Asn Arg Arg Pro Asp
                            40
Leu Glu Ile Tyr Lys Pro Gly Leu Ser Arg Leu Arg Asn Lys Pro Lys
                        55
                                             60
Ile Lys Glu Pro Pro Gly Ser Glu Glu Phe Lys Asp Glu Ile Val Asn
                    70
                                         75
Asp Arg Asp Cys Ser Ala Val Glu Asn Gly Thr Gln Pro Val Lys Asp
                                     90
                                                         95
Val Cys Lys Glu Leu Asn Asn Gln Glu Gln Asn Gly Pro Ile Asp Pro
                                105
Glu Asn Asn Arg Gly Gln Glu Ser Phe Pro Arg Thr Ala Gly Gln Glu
                            120
Asp Arg Ser Leu Lys Ile Ile Lys Arg Thr Lys Lys Pro Asp Leu Gln
                        135
                                             140
Ile Tyr Gln Pro Gly Arg Arg Leu Gln Thr Val Ser Lys Glu Ser Ala
                    150
                                         155
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Ser Arg Val Glu Glu Glu Val Leu Asn Gln Val Glu Gln Leu Arg
                                    170
Val Glu Glu Asp Glu Cys Arg Gly Asn Val Ala Lys Glu Glu Val Ala
                                185
Asn Lys Pro Asp Arg Ala Glu Ile Glu Lys Ser Pro Gly Gly Gly Arg
                           200
Val Gly Ala Ala Lys Gly Glu Lys Gly Lys Arg Met Gly Lys Gly Glu
                        215
                                            220
Gly Val Arg Glu Thr His Asp Asp Pro Ala Arg Gly Arg Pro Gly Ser
                    230
                                        235
Ala Lys Arg Tyr Ser Arg Ser Asp Lys Arg Arg Asn Arg Tyr Arg Thr
               245
                                    250
Arg Ser Thr Ser Ser Ala Gly Ser Asn Ser Ala Glu Gly Ala Gly
                                265
Leu Thr Asp Asn Gly Cys Arg Arg Arg Arg Gln Asp Arg Thr Lys Glu
                            280
Arg Pro Pro Leu Lys Lys Gln Val Ser Val Ser Ser Thr Asp Ser Leu
                        295
                                            300
Asp Glu Asp Arg Ile Asp Glu Pro Asp Gly Leu Gly Pro Arg Arg Ser
                                        315
                    310
Ser Glu Arg Lys Arg His Leu Glu Arg Asn Trp Ser Gly Arg Gly Glu
               325
                                    330
Gly Glu Gln Lys Thr Ser Ala Lys Glu Tyr Arg Gly Thr Leu Arg Val
                                345
Thr Phe Asp Ala Glu Ala Met Asn Lys Glu Ser Pro Met Val Arg Ser
                            360
Ala Arg Asp Asp Met Asp Arg Gly Lys Pro Asp Lys Gly Leu Ser Ser
                        375
                                           380
Gly Gly Lys Gly Ser Glu Lys Gln Glu Ser Lys Asn Pro Lys Gln Glu
                   390
                                        395
Leu Arg Gly Arg Gly Ile Leu Ile Leu Pro Ala His Thr Thr
                                   410
               405
Leu Ser Val Asn Ser Ala Gly Ser Pro Glu Ser Ala Pro Leu Gly Pro
                               425
           420
Arg Leu Leu Phe Gly Ser Gly Ser Lys Gly Ser Arg Ser Trp Gly Arg
                           440
                                                445
Gly Gly Thr Thr Arg Arg Leu Trp Asp Pro Asn Asn Pro Asp Gln Lys
                        455
                                           460
Pro Ala Leu Lys Thr Gln Thr Pro Gln Leu His Phe Leu Asp Thr Asp
                    470
                                        475
Asp Glu Val Ser Pro Thr Ser Trp Gly Asp Ser Arg Gln Ala Gln Ala
               485
                                   490
Ser Tyr Tyr Lys Phe Gln Asn Ser Asp Asn Pro Tyr Tyr Tyr Pro Arg
                               505
Thr Pro Gly Pro Ala Ser Gln Tyr Pro Tyr Thr Gly Tyr Asn Pro Leu
                            520
                                                525
Gln Tyr Pro Val Gly Pro Thr Asn Gly Val Tyr Pro Gly Pro Tyr Tyr
                        535
Pro Gly Tyr Pro Thr Pro Ser Gly Gln Tyr Val Cys Ser Pro Leu Pro
                    550
                                        555
Thr Ser Thr Met Ser Pro Glu Glu Val Glu Gln His Met Arg Asn Leu
                                    570
Gln Gln Gln Glu Leu His Arg Leu Leu Arg Val Ala Asp Asn Gln Glu
                                585
Leu Gln Leu Ser Asn Leu Leu Ser Arg Asp Arg Ile Ser Pro Glu Gly
                            600
Leu Glu Lys Met Ala Gln Leu Arg Ala Glu Leu Leu Gln Leu Tyr Glu
                        615
Arg Cys Ile Leu Leu Asp Ile Glu Phe Ser Asp Asn Gln Asn Val Asp
                    630
                                        635
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Gln Ile Leu Trp Lys Asn Ala Phe Tyr Gln Val Ile Glu Lys Phe Arg
                                 650
Gln Leu Val Lys Asp Pro Asn Val Glu Asn Pro Glu Gln Ile Arg Asn
                             665
Arg Leu Leu Glu Leu Leu Asp Glu Gly Ser Asp Phe Phe Asp Ser Leu
                         680
Leu Gln Lys Leu Gln Val Thr Tyr Lys Phe Lys Leu Glu Asp Tyr Met
                     695
Asp Gly Leu Ala Ile Arg Ser Lys Pro Leu Arg Lys Thr Val Lys Tyr
                  710
                                    715
Ala Leu Ile Ser Ala Gln Arg Cys Met Ile Cys Gln Gly Asp Ile Ala
                                 730
              725
Arg Tyr Arg Glu Gln Ala Ser Asp Thr Ala Asn Tyr Gly Lys Ala Arg
                             745
           740
Ser Trp Tyr Leu Lys Ala Gln His Ile Ala Pro Lys Asn Gly Arg Pro
                         760
Tyr Asn Gln Leu Ala Leu Leu Ala Val Tyr Thr Arg Arg Lys Leu Asp
                     775
                                        780
Ala Val Tyr Tyr Met Arg Ser Leu Ala Ala Ser Asn Pro Ile Leu
                  790
                                    795
Thr Ala Lys Glu Ser Leu Met Ser Leu Phe Glu Glu Thr Lys Arg Lys
              805
                                 810
Ala Glu Gln Met Glu Lys Lys Gln His Glu Glu Phe Asp Leu Ser Pro
                             825
Asp Gln Trp Arg Lys Gly Lys Lys Ser Thr Phe Arg His Val Gly Asp
                         840
Asp Thr Thr Arg Leu Glu Ile Trp Ile His Pro Ser His Pro Arg Ser
                     855
                                         860
Ser Gln Gly Thr Glu Ser Gly Lys Asp Ser Glu Gln Glu Asn Gly Leu
                 870
                                    875
Gly Ser Leu Ser Pro Ser Asp Leu Asn Lys Arg Phe Ile Leu Ser Phe
                                 890
              885
Leu His Ala His Gly Lys Leu Phe Thr Arg Ile Gly Met Glu Thr Phe
                             905
Pro Ala Val Ala Glu Lys Val Leu Lys Glu Phe Gln Val Leu Leu Gln
                                            925
                         920
His Ser Pro Ser Pro Ile Gly Ser Thr Arg Met Leu Gln Leu Met Thr
                                         940
                     935
Ile Asn Met Phe Ala Val His Asn Ser Gln Leu Lys Asp Cys Phe Ser
                                    955
                  950
Glu Glu Cys Arg Ser Val Ile Gln Glu Gln Ala Ala Ala Leu Gly Leu
              965
                                 970
Ala Met Phe Ser Leu Leu Val Arg Arg Cys Thr Cys Leu Leu Lys Glu
                            985
Ser Ala Lys Ala Gln Leu Ser Ser Pro Glu Asp Gln Asp Asp Gln Asp
                         1000
                                            1005
Asp Ile Lys Val Ser Ser Phe Val Pro Asp Leu Lys Glu Leu Leu Pro
                      1015
                                        1020
Ser Val Lys Val Trp Ser Asp Trp Met Leu Gly Tyr Pro Asp Thr Trp
                  1030
                                    1035
Asn Pro Pro Pro Thr Ser Leu Asp Leu Pro Ser His Val Ala Val Asp
                                 1050
              1045
Val Trp Ser Thr Leu Ala Asp Phe Cys Asn Ile Leu Thr Ala Val Asn
                             1065 1070
Gln Ser Glu Val Pro Leu Tyr Lys Asp Pro Asp Asp Asp Leu Thr Leu
                         1080 1085
Leu Ile Leu Glu Glu Asp Arg Leu Leu Ser Gly Phe Val Pro Leu Leu
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                                        1100
Ala Ala Pro Gln Asp Pro Cys Tyr Val Glu Lys Thr Ser Asp Lys Val
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                                     1115
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Ala Leu Cys Gly Gln Glu Glu Pro Leu Leu Ala Phe Lys Gly Gly Lys
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           1140
Tyr Val Ser Val Ala Pro Val Pro Asp Thr Met Gly Lys Glu Met Gly
       1155
                          1160
                                             1165
Ser Gln Glu Gly Thr Arg Leu Glu Asp Glu Glu Glu Asp Val Val Ile
                                         1180
                      1175
Glu Asp Phe Glu Glu Asp Ser Glu Ala Glu Gly Ser Gly Glu Asp
                  1190
                                     1195
Asp Ile Arg Glu Leu Arg Ala Lys Lys Leu Ala Leu Ala Arg Lys Ile
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              1205
Ala Glu Gln Gln Arg Gln Glu Lys Ile Gln Ala Val Leu Glu Asp
                              1225
                                                 1230
           1220
His Ser Gln Met Arg Gln Met Glu Leu Glu Ile Arg Pro Leu Phe Leu
                          1240
                                              1245
Val Pro Asp Thr Asn Gly Phe Ile Asp His Leu Ala Ser Leu Ala Arg
                      1255
                                         1260
Leu Leu Glu Ser Arg Lys Tyr Ile Leu Val Val Pro Leu Ile Val Ile
                  1270
                                     1275
Asn Glu Leu Asp Gly Leu Ala Lys Gly Gln Glu Thr Asp His Arg Ala
               1285
                                  1290
Gly Gly Tyr Ala Arg Val Val Gln Glu Lys Ala Arg Lys Ser Ile Glu
           1300
                              1305
Phe Leu Glu Gln Arg Phe Glu Ser Arg Asp Ser Cys Leu Arg Ala Leu
       1315
                          1320
Thr Ser Arg Gly Asn Glu Leu Glu Ser Ile Ala Phe Arg Ser Glu Asp
                      1335
                                          1340
Ile Thr Gly Gln Leu Gly Asn Asn Asp Leu Ile Leu Ser Cys Cys
                                     1355
                   1350
Leu His Tyr Cys Lys Asp Lys Ala Lys Asp Phe Met Pro Ala Ser Lys
                                                     1375
               1365
                                 1370
Glu Glu Pro Ile Arg Leu Leu Arg Glu Val Val Leu Leu Thr Asp Asp
                                                 1390
           1380
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Arg Asn Leu Arg Val Lys Ala Leu Thr Arg Asn Val Pro Val Arg Asp
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                                                                   120
ggccccgcag gccgggagca gagaaaacat gaaggaatta aaggaggcca ggccgcgcaa
                                                                   1.80
agataacagg cgtccagatc tggaaatcta taagcctggc ctttctcggc taaggaacaa
                                                                   240
gcccaaaatc aaggaacccc ctgggagtga ggaattcaaa gatgaaattg ttaatgaccg
                                                                   300
agattgctct gctgttgaaa atggtacaca gcccgttaaa gatgtctgca aggaactgaa
                                                                   360
caaccaagag cagaatggtc ctatagaccc agaaaataat cggggacaag aatcctttcc
                                                                   420
taggactgct ggacaagagg atcgtagtct aaaaattatc aaaagaacaa agaaacccga
cctqcaqatc tatcaqcctg gacgacgttt gcagactgtt agcaaagaat ccgccagtcg
ggtggaggag gaagaagtcc tcaaccaggt agaacaactg agagtagagg aagatgagtg
                                                                   600
taggggaaat gttgcgaagg aggaagttgc gaataaacca gacagggccg agatagaaaa
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| gagcccaggt | ggtgggagag | taggggctgc | aaaaggagaa | aaaggaaaga | ggatgggaaa | 720 |
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| aggggagggg | gtgagggaaa | cccacgacga | cccggcccgc | gggaggccgg | gctccgcaaa | 780 |
| | cgctcagaca | | | | | 840 |
| | aacagcgctg | | | | | 900 |
| acadastada | accaaggaga | aaccaccact | daadaadcaa | atatatatat | cctcaaccga | 960 |
| | | | | | | 1020 |
| | gaggacagaa | | | | | |
| | catttagaaa | | | | | 1080 |
| | tatcgaggca | | | | | 1140 |
| gtctcccatg | gtgaggtcag | ccagggatga | tatggataga | ggaaagcctg | acaaaggctt | 1200 |
| | ggcaaaggct | | | | | 1260 |
| | cgtggcattc | | | | | 1320 |
| | gagtccgcgc | | | | | 1380 |
| | | | | | | 1440 |
| | tggggccgtg | | | | | |
| | gctctaaaga | | | | | 1500 |
| | acatcttggg | | | | | 1560 |
| aaactctgac | aacccctatt | attacccccg | gacaccaggc | cctgcctccc | agtatcccta | 1620 |
| tacgggctat | aaccctctac | agtacccagt | gggccctacg | aatggtgtgt | acccagggcc | 1680 |
| | ggctacccga | | | | | 1740 |
| | cccgaggagg | | | | | 1800 |
| | cgggtggctg | | | | | 1860 |
| | | | | | | 1920 |
| | ccggagggcc | | | | | 1980 |
| | tgtattctat | | | | | |
| | aatgctttct | | | | | 2040 |
| gaatgttgag | aacccagaac | agattcggaa | cagacttttg | gagctcttgg | atgagggtag | 2100 |
| tgacttcttt | gatagtttgc | ttcagaagct | gcaggttact | tacaagttca | aactggaaga | 2160 |
| | ggtcttgcca | | | | | 2220 |
| | cagcgatgca | | | | | 2280 |
| | gcgaattatg | | | | | 2340 |
| | gggcgcccct | | | | | 2400 |
| | | | | | | 2460 |
| | gtctattact | | | | | 2520 |
| | ctcatgagct | | | | | |
| | gaggaatttg | | | | | 2580 |
| | gttggagatg | | | | | 2640 |
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| | cggattggga | | | | | 2820 |
| | ttactgcagc | | | | | 2880 |
| | aatatgtttg | | | | | 2940 |
| | | | | | | 3000 |
| | gtgatccagg | | | | | |
| | tgcacctgct | | | | | 3060 |
| | gaccaagacg | | | | | 3120 |
| gctccccagt | gtcaaagtct | ggtcagattg | gatgctcggc | tacccggaca | cctggaatcc | 3180 |
| tcctcccaca | tccctggatc | tgccctcgca | tgttgctgtg | gatgtatggt | cgacgctggc | 3240 |
| tgatttctgt | aacatactga | ctgcagtgaa | tcagtctgag | gtgccactgt | acaaggaccc | 3300 |
| ggatgatgac | ctcacccttc | ttatcctgga | agaggatcgg | cttctctcgg | gctttgtccc | 3360 |
| | gcccctcagg | | | | | 3420 |
| | aaaagggtca | | | | | 3480 |
| | ctggcattca | | | | | 3540 |
| | | | | | | 3600 |
| | gaaatgggaa | | | | | 3660 |
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| | cgggccaaga | | | | | 3720 |
| ccaggaaaag | atccaggctg | tcctggagga | ccacagtcag | atgaggcaga | tggagctcga | 3780 |
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| | ctggagagca | | | | | 3900 |
| | ctggccaagg | | | | | 3960 |
| | aaggcccgca | | | | | 4020 |
| | cgagccctga | | | | | 4080 |
| | actggccagc | | | | | 4140 |
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| | gacaaggcta | | | | | |
| | gtggtgctgt | | | | | 4260 |
| gaatgttcct | gtacgggaca | tcccagcctt | cctcacgtgg | gcccaggtgg | gctgagggag | 4320 |
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| ccacactggg gccccccc | c cccgtggaac | cgttcctgaa | aggccaccag | gcgcccagtg | 4380 |
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| ttccaaccca cgccacgg | c atgctgtggg | ggacctgctc | ctcacagagc | ccctcccaag | 4500 |
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| gctacagcaa cagcagct | g gcaagccaga | taggccgccc | atgctctcag | cctttctccc | 4620 |
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| taataaattt ttagttat | ja aacat | | | | 5965 |